

ABSTRACT

In a wireless LAN communication system in which the data transmission rate is asymmetric between an upstream channel and a downstream channel, a wireless band is effectively used. The transmission rate of an ACK (reception acknowledgement signal) is variably controlled between an AP (Access Point) and an STA (mobile terminal station), based on the number of retransmissions of a user data frame. Specifically, control is performed as follows. The number of retransmitted frames is counted, and if the value is greater than a predetermined value M , which means that the transmission quality of an ACK is poor, the ACK transmission rate is brought one level down. The number of successive successful frames is counted, and if the value is greater than a predetermined value N , which means that the transmission quality is good, the transmission rate is brought one level up. By this, although conventionally the ACK transmission rate is determined depending on the reception rate of a data frame, the ACK transmission rate is independently determined. Thus, the fast data transmission rate of a downstream channel does not depend on the ACK transmission rate and accordingly a limited wireless communication band is effectively used.